

REMARKS

I. Status of the Application

Claims 1-20 are pending in this application. Claims 17-20 were withdrawn from consideration. In the August 24, 2007 office action, the Examiner:

A. Rejected claims 1-16 under 35 U.S.C. § 103(a) as being unpatentable over Mistrater (U.S. Patent No. 5,681,391) in view of Pinsly (U.S. Patent No. 6,180,310) and Cia (U.S. Patent No. 6,270,850); and

In this response, Applicants have amended claims 2-6 and 8-16 for reasons unrelated to the claim rejections. In particular, claims 2-6 and 8-16 have been amended to correct informalities such as removing the use of the term "wherein." Otherwise, no substantive amendments to the claims have been made. Applicants respectfully traverse the rejection of claims 1-16 and request reconsideration in light of the following remarks.

II. Claim 1

Claim 1 was rejected as being obvious over Mistrater in view of Pinsly and Cia. However, neither Mistrater, Pinsly nor Cia, neither alone nor in combination, teaches, shows or suggests measuring the viscosity of the CTL solution and altering the pump motor angular velocity to control the thickness of the CTL solution deposited on the substrate based on the measurement of the viscosity.

In the office action, Mistrater was cited as providing the teachings of claim 1 except measuring the viscosity of the CTL solution and altering the pump

motor angular velocity. Pinsly was cited as providing the teaching of measuring the viscosity of the CTL solution. Cia was cited as providing the teaching that coating speed and viscosity are related to the coating thickness uniformity. Mistrater was also cited as providing the teaching that pull rate and initial flow rate of the CTL solution results in a relative velocity which affects coating thickness. Finally, it was stated that it would have been obvious to alter the angular pump velocity to alter the vertical flow rate of the fluid in response to the sensed viscosity.

However, Applicant submits that none of the prior art references teaches or suggests altering angular pump velocity to alter the vertical flow rate of the fluid in response to the sensed viscosity of the CTL solution. In fact, it is submitted that at least Mistrater and Pinsly specifically teach against altering the vertical flow rate or the relative velocity of the CTL solution by altering the angular pump velocity. Cia was not cited as disclosing or suggesting, nor does it disclose or suggest, altering the angular pump velocity to alter the relative velocity of the CTL solution.

1. Mistrater

Mistrater teaches against changing the relative velocity of the CTL solution. Referring to col. 11, lines 40-50, Mistrater discloses that "all piping should not impart sudden changes of direction or velocity to the liquid coating material, particularly, the manifold which delivers the liquid coating material to the individual coating vessels with no change in relative velocity." Mistrater also

states that "it is another object of the present invention to provide an improved system for dip coating a cylindrical electrophotographic imaging member which is substantially free of sources of sudden change of velocity that could be imparted to a flowing liquid coating material." (Mistrater, col. 5, lines 5-10). Mistrater teaches that disruptions in the laminar flow caused by changes in velocity of the flowing liquid can cause coating defects in the final drum coating. (Mistrater, col. 10, lines 45-55). Thus, Mistrater teaches against changing the velocity of the CTL solution or the relative velocity of the solution so that disruptions in the laminar flow of the CTL solution are prevented.

2. Pinsly

Pinsly also teaches against altering the flow rate of the coating material into the tube, or coating vessel. For example, at col. 10, lines 10-22, Pinsly states that "the flow rate of the coating solution into the coating vessel 20 should be substantially constant. Fluctuations in the flow rate can cause undesirable fluctuations of the meniscus between the cylindrical member 22 as it is being withdrawn from a coating bath 26. These undesirable fluctuations of the meniscus will cause undesirable thickness variations along the length of the cylindrical member." Thus, Pinsly specifically teaches that flow rate should remain constant and fluctuations of the flow rate should be avoided in order to prevent undesirable thickness variations.

3. Cia

Cia was cited as providing the teaching that coating speed and viscosity are related to coating thickness. Cia was not cited as disclosing or suggesting, nor does it disclose or suggest, altering the angular relative velocity of the CTL solution based on viscosity measurements.

4. Conclusion with Respect to Claim 1

A *prima facie* case of obviousness has not been established with respect to claim 1 because the combination of references fails to teach, show or suggest altering angular pump velocity to alter the vertical flow rate of the fluid in response to the sensed viscosity of the CTL solution. In fact, as described above, Mistrater and Pinsly actually teach against altering angular pump velocity to alter the vertical flow rate of the fluid in response to the sensed viscosity of the CTL solution. Accordingly, because a *prima facie* case of obviousness has not been established with respect to claim 1, it is respectfully submitted that the rejection of claim 1 over the prior art should be withdrawn.

II. Claims 2-6

Claims 2-6 were rejected as being rendered obvious by the combination of Mistrater, Pinsly, and Cia. Claims 2-6, however, depend directly or indirectly from claim 1. Therefore, for at least those reasons given in connection with claim 1, it is respectfully submitted that the prior art rejection of claims 2-6 should be withdrawn as well.

In addition, claims 2-6 include additional reasons for patentability over the prior art. For example, claims 3 and 4 include the limitation that the altering of the pump motor angular velocity is performed during the withdrawing. None of the prior art teaches, shows or suggests altering pump velocity, or altering any coating parameter, during withdrawal of the substrate from the tube.

For example, Mistrater does not disclose adjusting pump angular velocity, or anything else, during the withdrawal of the substrate from the tube. Pilsny discloses adjusting the solvent in CTL solution in response to an increase in viscosity of the solution. However, Pilsny does not disclose that the adjustment of viscosity of the CTL solution by adding solvent occurs during withdrawal of the substrate from the tube. Cia discloses determining a coating speed and selecting a gap distance. The coating speed and gap distance are determined or selected before the dip coating process is performed in order to ensure that the shear stress of the coating solution is greater than the yield stress of the solution by a predetermined amount. There is no disclosure of adjusting or altering any parameters of the dip coating process during withdrawal of the substrate from the tube.

Thus, none of the prior art references teach, show or suggest that the "altering of the pump motor angular velocity is performed during the withdrawing." Accordingly, for at least this additional reason, it is respectfully submitted that the rejection of claims 3 and 4 over the prior art should be withdrawn.

III. Claim 7

Claim 7 was rejected as being obvious over the prior art. Claim 7 includes limitations similar to those found in claim 1. For example, claim 7 includes the limitation of "adjusting the differential rate by altering the flow rate of the coating solution in response to the sensed viscosity." Therefore, the arguments presented above in connection with claim 1 are applicable to claim 7. Accordingly, for at least the same reasons as given above in connection with claim 1, it is respectfully submitted that the rejection of claim 7 over the prior art should be withdrawn.

IV. Claims 8-16

Claims 8-16 were rejected as being rendered obvious by the combination of Mistrater, Pinsly, and Cia. Claims 8-16, however, depend directly or indirectly from claim 7. Therefore, for at least those reasons given in connection with claim 7, it is respectfully submitted that the prior art rejection of claims 8-16 should be withdrawn as well.

V. Conclusion

For all of the foregoing reasons, Applicants respectfully submit a patentable contribution to the art has been made. Favorable reconsideration and allowance of this application is therefore respectfully requested.

In the event applicant has inadvertently overlooked the need for an extension of time or payment of an additional fee, the applicant conditionally

Amendment
November 26, 2007

petitions therefore, and authorizes any fee deficiency to be charged to deposit
account number 24-0037.

Respectfully submitted,
MAGINOT, MOORE & BECK LLP

A handwritten signature in cursive script, reading "David R. Moorman", written over a horizontal line.

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